



THYROID AND PREGNANCY

Universal screening for thyroid disorders during pregnancy

BACKGROUND

Thyroid disorders during pregnancy may be associated with a number of complications including miscarriage, preterm delivery, impaired brain development in the children and postpartum thyroid inflammation in the mother. Several studies have shown that abnormal thyroid hormone levels may be seen in ~5% of pregnant women and positive thyroid peroxidase antibodies (TPO AB, a marker of autoimmune thyroid disease) with normal thyroid levels may be seen in up to 20% of pregnant women. There are known risk factors for developing thyroid disorders during pregnancy, including: a family history of autoimmune thyroid disorders, presence of a goiter, signs and symptoms of thyroid disease, known thyroid dysfunction, history of type 1 diabetes mellitus or other autoimmune diseases, prior neck irradiation and previous miscarriages or preterm deliveries. Pregnant women with these known risk factors are easily screened for thyroid disease with blood tests of TSH and TPO AB. Women with abnormal levels of TSH or TPO AB can be treated with thyroid hormone to decrease the risk of complications during pregnancy. However, screening all pregnant women for the presence of thyroid disease regardless of risk factors is controversial and is not currently done on a routine basis. The goal of this study was to determine how often abnormal TSH and/or TPO AB levels are found in pregnant women who have no risk factors for thyroid disease.

THE FULL ARTICLE TITLE:

Wang W et al The prevalence of thyroid disorders during pregnancy in China: the benefits of universal screening in the first trimester of pregnancy. *Eur J Endocrinol*. November 8, 2010 [Epub ahead of print].

SUMMARY OF THE STUDY

The study group included 2899 pregnant women in their first trimester living in Shenyang, China. Thyroid hormones were measured in all women and a questionnaire was obtained asking about thyroid risk factors. The average age of the women was 27.6 years and 367 of the 2899 women (12.7%) were identified as having one or more thyroid risk factors. The most common

risk factor was a personal or family history of thyroid disease or a previous miscarriage. A total of 294 women (10.2%) had abnormal thyroid hormone levels, with most having an increased TSH and/or a low FT₄. TPO AB with normal thyroid hormone levels were present in 279 (9.6%) women. Abnormal thyroid levels were more common in the women with one or more thyroid risk factors as compared to no risk factors. However, most of the women with an increased TSH (171, 78.8%) had no risk factors. Of the 28 patients with hyperthyroidism, only 7 were in the high-risk group. This study suggests that only screening women with thyroid risk factors would miss >80% of women with thyroid disorders.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

It is clear that untreated thyroid disorders during pregnancy may lead to complications including miscarriage, preterm delivery and impaired brain development in the children. The current standard of care includes screening all women with risk factors for thyroid disorders, usually with a TSH and TPO AB level. However this study is one of several recent studies that conclude that most women that have undiagnosed thyroid disorders during pregnancy do not have any risk factors (see [Leung, A “Thyroid disorders are common in pregnant women without risk factors for thyroid disease” *Clinical Thyroidology for Patients*, November 2010](#) and [Braunstein, G “Effects of detection and treatment of hypo- and hyperthyroidism in pregnancy” *Clinical Thyroidology for Patients*, May 2010](#)). Thus, the only way they would be diagnosed would be through screening all women. In this study, only 198 of the 2532 women (7.8%) with no risk factors had thyroid disorders, so >90% of women screened would have normal thyroid function. In summary, this study shows that screening only women with risk factors would miss a significant number of women with thyroid disorders and provides further evidence to support screening all pregnant women for thyroid disorders.

— Alan P. Farwell, MD

continued on next page



THYROID AND PREGNANCY, continued

ATA THYROID BROCHURE LINKS

Thyroid Disease and Pregnancy: http://www.thyroid.org/patients/patient_brochures/pregnancy.html

Thyroiditis: http://www.thyroid.org/patients/patient_brochures/thyroiditis.html

Hypothyroidism: http://www.thyroid.org/patients/patient_brochures/hypothyroidism.html

ABBREVIATIONS & DEFINITIONS

TPO antibodies — these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.

TSH — Thyroid stimulating hormone – produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

Goiter — a thyroid gland that is enlarged for any reason is called a goiter. A goiter can be seen when the thyroid is overactive, underactive or functioning

normally. If there are nodules in the goiter it is called a nodular goiter; if there is more than one nodule it is called a multinodular goiter.

Hypothyroidism — a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

Levothyroxine — the major hormone produced by the thyroid gland and available in pill form as Levoxyl™, Synthroid™, Levothroid™ and generic preparations.

Miscarriage — this occurs when a baby dies in the first few months of a pregnancy, usually before 22 weeks of pregnancy.